ORIGINAL ARTICLE

Treating the clock and not the patient: ambulance response times and risk

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Background: In a qualitative study of paramedics' attitudes to pre-hospital thrombolysis (PHT), the government target that emergency calls should receive a response within 8 minutes emerged as a key factor influencing attitudes to staff morale and attitudes to the job as a whole. A study was undertaken to examine paramedics' accounts of the effects on patient care and on their own health and safety of attempts to meet the 8 minute target.

Methods: In-depth semi-structured interviews were conducted with a purposive sample of 20 experienced paramedics (16 men) mostly aged 30–50 years with a mean length of service of 19 years. The paramedics were encouraged to raise issues which they themselves considered salient. The interviews were tape recorded, transcribed, and analysed according to the constant comparative method.

Results: The paramedics argued that response time targets are inadequate as a performance indicator. They dominate ambulance service culture and practice at the expense of other quality indicators and are vulnerable to ''fiddling''. The targets can conflict with other quality indicators such as timely administration of PHT and rapid transport of patients to hospital. The strategies introduced to meet the targets can be detrimental to patient care and also have adverse effects on the health, safety, wellbeing, and morale of paramedics.

Conclusions: The results of this study suggest that the 8 minute response time is not evidence based and is putting patients and ambulance crews at risk. There is a need for less simplistic quality indicators which recognise that there are many stages between a patient's call for help and safe arrival in hospital.

The National Service Framework for coronary heart disease stipulates that 75% of category A (emergency) calls should be reached within 8 minutes. Not all ambulance services can achieve this easily, with 29% of services in 2003/4 and 45% in 2002/3 failing to achieve this target.[1] This paper describes paramedics' accounts of their experiences of attempting to meet the 8 minute target. It draws upon data which were collected as part of a qualitative study of paramedics' attitudes to providing pre-hospital thrombolysis (PHT).[2] In this wider study, paramedics reported high levels of enthusiasm for their role with patient care, often described in terms of ''making a difference'', the major source of job satisfaction and role identity. However, a number of issues emerged which were adversely affecting attitudes to their work. These included pay, increased and increasing work load and time pressure, misuse of the ambulance service by the public and some health professionals, poor communication within the ambulance trust, and other issues relating to management and the continual addition of more drugs and procedures to their therapeutic repertoire. The theme which emerged most strongly as a major influence on paramedics' morale and their feelings about their job as a whole was the 8 minute response time target.

METHODS

In October and November 2003, in-depth interviews were conducted with a purposive sample of 20 experienced paramedics (16 men) from nine ambulance stations serving a large District General Hospital (DGH). The participants, who were mostly aged 30–50 and had a mean length of service of 19 years, were selected to represent the sex and age distribution of paramedics in the trust, all the ambulance stations serving the DGH, and the range of experience and length of service. Interviews were semi-structured and informed by a loose topic guide (box 1) which encouraged paramedics to describe their attitudes to their job as a whole and to thrombolysis in particular, so that they were encouraged to raise issues which they themselves considered salient. Interviews were tape recorded, transcribed, and analysed according to the constant comparative method using QRS N6 software.

The constant comparative method is an accepted method of analysing qualitative data which involves systematically coding interview transcripts for initial emergent themes. These are compared repeatedly with previous codings and

Box 1 Paramedic study topic guide

- How long have you been in the ambulance service?
- How long have you been a paramedic?
- How did you get to be a paramedic?
- What do you like best about your job?
- Have you seen a lot of changes in the time you have been a paramedic?
- How do you feel about doing pre-hospital thrombolysis (PHT)?
- How did you find the training?
- What factors do you think affect people's attitudes to doing PHT?
- Do you foresee a time when you'll feel confident to give PHT without back up from the hospital?
- Do you feel management is supportive?
- Are there any down sides to the job? (What are they)?
- Is there anything else you'd like to add?

classifications to provide a conceptual map of the interrelationships between themes.[3] Coding was checked for reliability by a researcher from an academic institution independent of the study.

The study was approved by the local research ethics committee.

RESULTS

In common with other ambulance service trusts in England and Wales, the ambulance trust serving the study area had recently introduced strategies to attempt to meet the 8 minute response time target for category A emergency calls. This target was a particular challenge for the area which has a dispersed rural population and long journey times. Measures introduced to meet the target were (1) the use of rapid response vehicles (RRVs) which are ordinary cars staffed usually by a single person but not always a paramedic;* (2) the use of "standby" in which emergency vehicles wait for calls at strategic locations in the community rather than at the ambulance stations; and (3) the use of "community first responders", volunteer members of the public trained in basic life support and equipped with a defibrillator. There was no increase in the number of fully staffed ambulances. These strategies should be seen in the context of a year on year increase in emergency calls (there was an increase in emergency calls in the study ambulance trust of nearly 60% between 1994/5 and 2000/1) which has increased the workload of emergency crews to such an extent that they are under constant time pressure and breaks and mealtimes are frequently missed. Paramedics' accounts of response time targets and their attendant strategies had three main strands:

- Their inadequacy as a performance indicator, the extent to which they dominated ambulance service culture and practice at the expense of other quality indicators, and their vulnerability to "fiddling" by the trust because of a lack of standard criteria for measuring timings and for deciding on whether or not a call is an emergency.
- Their detrimental effects on patient care.
- Their detrimental effect on paramedics' health, safety and wellbeing.

Response time targets as a performance indicator

Paramedics described the role of response time targets in ambulance service culture as "an obsession", "ludicrous", and "impossible". They felt the 8 minute target had its own dynamic which was separate from and often in opposition to the ethos of patient care, and yet which now seemed to dominate service delivery, taking priority over factors which they saw as more important such as the quality of care provided or patient outcomes:

"You see, it's an unfortunate situation. With this eight minutes, if you arrive in seven minutes and the patient dies it's a success. If you arrive in nine minutes and the patient lives and it's a good outcome, you've failed. Which to me is absolute rubbish. And we are now treating the clock and not the patient. The patient care, in my view, is gone, absolutely. Well it's terrible. It's awful." (Andy)†

"Eight minutes, that's all we hear is eight minutes. At the end of the day when we book off we can see our 'A' category performance on the screen. That the trust has done 75% eight minute responses, not how many lives we've saved, how many people you know … how many babies we've delivered … It's not that on the screen, it's the eight minutes." (Rob)

Response time targets and patient care

Many of the paramedics felt strongly that response time targets put patients at risk. The use of RRVs to meet the 8 minute target could considerably delay the transport of patients to hospital as, once the target was met, the arrival of a back up ambulance ceased to be a priority and there could be long waits. Paramedics reported sometimes waiting an hour or more for ambulance back up to arrive, giving examples of doing so in highly distressing circumstances—for example, where the patient was dying or where there had been a cot death.

"I think on one occasion this year where I didn't sleep for a few nights, I was on my own in an isolated area with somebody that I knew was going to die, but if I'd had the facility to move her I could have made a bit of a difference. And there was no facility because I was in a car and not an ambulance." (Barry)

RRVs, with their single person crew, were believed to offer an inferior level of patient care. A paramedic on his or her own cannot move or transport the patient, nor provide the full range of advanced life support skills because a car is not as well equipped as an ambulance and some procedures need two people to perform. The use of RRVs can delay thrombolysis, for example, as cars do not carry the necessary ECG and telemetric equipment.

"Because you're getting RRVs which aren't fully equipped and there is only one person on them. So one person can only deal with a certain amount. If you're on a big resuss job you can only do CPR. You can't use your extended skills because you need more than one person to do that. Especially people out in the [rural areas] aren't getting the care …" (Maggie)

"But I think in major trauma or road traffic accidents, there's a lot of things which need doing and it's not good for one person. And that's the only time I'd say I get stressed out, with that type of thing." (Tom)

Paramedics also felt that community first responders, originally introduced to ensure timely defibrillation for patients in cardiac arrest, were now being deployed in a range of inappropriate emergency situations solely to meet the target.

"We're trying to prop the service up now with our first responders. So now you've got someone knocking on your door who's had four or five days training, and to me that is a total retrograde step. Absolutely. Because as I understood it, this scheme started off … where you had a cardiac arrest where they would turn up with a defibrillator. And you know as well as I do, that's what you want. You want a defibrillator. But it's not. They're now turning them out for anything which is, to me, a retrograde step and they are representing the ambulance service and I'm against that." (Andy)

The inappropriate use of first responders was considered an affront to paramedics' own advanced skills and dangerous for patients because of the very basic level of training of these volunteers.

"Say, for instance, someone is hyperventilating; they're not exactly trained. A first responder will go to somebody who's hyperventilating, they've been trained if somebody's short of breath give them oxygen. So it's the wrong treatment for hyperventilation, but they haven't been taught that so they think the patient's having difficulty breathing and they're treating what they see." (Rob)

Despite their advanced life support skills which they valued highly, paramedics still believed that rapid transport to hospital, where definitive care is available, was the aspect of their role which was of most benefit to patients, and that this important standard had been lost from view in the scramble to meet response time targets.

* Ambulance crews consist of paramedics trained in advance life support skills and technicians who have fewer skills. It is UK government policy that there should be a paramedic on every ambulance, but this does not always happen. On some occasions RRVs may be staffed by a technician.

† The names of the respondents are pseudonyms.

''And we were looking at the figures and they've also reduced people getting into hospital because of the cars. They were saying that it's actually doubled the times that patients are getting in. So that seems a step backwards.'' (Judy)

The use of standby to meet targets was a source of particular contention as very few paramedics believed it achieved this purpose, relating experiences of standing by in the wrong place for the call, ambulances crossing or overtaking each other, and of sometimes covering hundreds of miles driving from one standby point to another without answering a single call. There was little doubt that standby was not benefiting patients.

''I have not seen any evidence from my management that any of the standby points has actually saved one life. They have not been able to produce or they have not come up with any evidence whatsoever.'' (Nick)

Standby was believed to be a source of inequitable provision as standby points were located in the more populous areas where response times were more likely to be achieved at the expense of the less populated rural areas. Thus, standby served a culture which was target led rather than needs led, and which they believed created a ''postcode lottery''. In addition, some paramedics expressed scepticism about the reliability of response time statistics, believing that they could be manipulated by the trust in various ways to give the appearance of meeting the time target. The practice of manipulating response time statistics was also highlighted by the report from the Commission for Health Improvement (CHI), lending credence to these suspicions.[4]

''But then there is the inference … I mean far be it from me to say whether category A's are shuffled around. Whether if there's a vehicle close to one then it can be category A, but if you've got like a 50 minute run perhaps it's not.'' (Andy)

''I can manipulate figures and I know when Control put a job on our screen and they know that we can't make it in eight minutes, they don't put a code up so it's unclassified really and you can fiddle things …, fiddle figures, up to a point.'' (Clive)

Response time targets and ambulance crews

Ambulance trusts have the highest sickness absence rates in the NHS.[5] Paramedics described how response time targets had a profound impact on their own health, safety and wellbeing. Deployment of crews at standby points in the community rather than at ambulance stations sometimes required them to spend hours sitting in their vehicles without access to drinks, toilet facilities, warmth or company, and in poor weather conditions or unsafe areas, unable to leave the vehicles to stretch or walk around. Ambulances are not ergonomically designed for this. Paramedics reported increased prevalence of back pain and discomfort which they felt adversely affected their performance in treating patients.

''Sitting in a vehicle I get lower backache pain and in the backs of my legs and you think 'Oh blimey'. You know, you just … it's not sort of geared up for that and then if you've got backache and all that you're not going to treat your patient properly. And they're cold, but if you keep the engine on and you're sat there and you know your diesel fumes just sit in there and there will be air intakes, you know.'' (Rob)

It is also likely that standby will be detrimental to the psychological health of ambulance crews. Paramedics sometimes have to deal with profoundly distressing incidents in their routine working lives, and a number of studies have recorded high levels of stress related disorders among this occupational group.[6 7] An extensive literature testifies to the importance of colleague interaction and support in processing the feelings resulting from these types of ''bad jobs''.[8–10] Such ad hoc informal support from respected peers who have had similar experiences is often the type of support preferred by paramedics[10] and is highly protective of their mental health. The use of humour (in particular sick or dark humour) is a familiar part of ambulance station culture and has been described as an important strategy for defusing the stress of difficult jobs, and one which can only be used with colleagues. Time target culture is itself a source of stress.[7] The lack of crewroom support which is an unregarded side effect of standby, by removing a significant therapeutic strategy for dealing with work related stressors, may have profound long term consequences for the mental health of paramedics. A number of paramedics commented on the loss of this important source of support.

''And the other thing it's took away from the staff is the downtime in the crew room. There are lots of things that the ambulance service have always managed to do is counsel each other in the crew room. There's always been that element of banter and sick sense of humour if you like, for want of a better thing.'' (Mike)

''Um … mainly … we talk to each other a lot, which is a shame because the present situation where we don't get that much contact with each other because they won't allow two crews to be in the same place at the same time, but you really need to talk to your peers about it, I think anyway. But you get bad jobs, and you just talk and talk and talk about it until it goes away. And by talking about them it makes it sort of quite normal you know, makes it feel normal.'' (Angela)

As assaults on ambulance crews increase, standby can make them sitting targets for abuse, and RRVs with a single crew member are not considered safe in some circumstances such as scenes of drunkenness or violence. All in all, response time targets were considered to be a major cause of declining morale among ambulance crews.

''Yeah [standby] has ruined the morale. And there has been a lot of talk about people saying 'We're not going to do it any more, we'll have meetings …', but it's never come about.'' (Nick)

''I think if you were to ask a paramedic like myself who's done 20 odd years, he would say the morale's never been lower.'' (Mike)

DISCUSSION

Paramedics' argument that they have seen no evidence that the response time target improves patient care appears to be supported by the literature. Such literature as exists on ambulance response times and patient outcomes is conflicting, but there are studies suggesting that an 8 minute response would not improve survival after cardiac arrest,[11] survival in emergency life threatening calls,[12] or survival after traumatic injury.[13] These studies suggest that outcomes are improved only where there is a response time of 5 minutes or less. A Swiss study found that cardiac arrest patients defibrillated in hospital an average of 15.6 minutes after arrest were more likely to survive to hospital discharge, to be alive at 1 year follow up, and to survive without neurological impairment than those defibrillated in the community at 5.7 minutes.[14] In any case, cardiac arrest represents a very small proportion of emergency calls. The suggestion that reduced response times may improve survival ''remains speculative and unreported''.[12] There is a clear need for targets to be based on rigorous systematic review of the evidence, and where this is absent or inconclusive, for well designed definitive studies to be undertaken.

The belief of paramedics that response time targets are being achieved at the expense of considerations of quality of care and patient outcomes echoes the findings of the Commission for Health Improvement[4] which described the targets as a poor quality indicator and ''too simplistic and narrow'' for exactly the reasons given by paramedics. Critiques of ''target culture''[15 16] have included claims that there are others—in particular the A&E standard that patients should be seen within 4 hours—which are being manipulated in ways that may be putting patients at risk.[17–19] The problem of contradictory imperatives also needs to be

Key messages

- Paramedics' accounts of meeting response time targets, supported by evidence from the medical and official literature, suggest that the 8 minute response time target is not evidence based and is putting patients and ambulance crews at risk.
- There is a need for less simplistic quality indicators which recognise that there are many stages between a patient's call for help and safe arrival in hospital, of which initial response is just one—and one which may not be the most significant in terms of quality of care and patient outcomes.
- Performance indicators should take into account the experiences and views of those who deliver the service, not just those of their managers or of the government who may have different agendas.
- The government and the ambulance trusts have much to gain from achieving response time targets—the government has hard evidence of ''health improvement'' and the trusts win prestige and financial remuneration if targets are met. Patients and ambulance crews may have much to lose.

addressed. The 2000 NHS plan, for example, promotes both an 8 minute response time target—which it claims will save 1800 lives a year—and PHT—which it claims will save 3000 lives a year. A source from the Department of Health indicated that this figure was a calculation based on potential lives saved if all eligible patients received timely PHT (personal communication, 2004) but, as the paramedics' accounts suggest, strategies in place to meet the response time target such as RRVs and first responders will actually delay or prevent PHT for some patients. Unison, the trade union which represents the interests of National Health Service staff, has argued that only ambulance response times and not those of first responders should be counted towards the target, and this might serve as a deterrent to the inappropriate use of minimally trained volunteers which paramedics argue can put patients at risk.

Strategies to meet targets are compromising the health and safety of ambulance crews and adversely influencing morale. Paramedics are the experts in delivery of pre-hospital care, yet there appears to be no mechanism by which their experience can inform policy decisions which are made ''in the context of money, political power and precedent'',[20] and their impact on the working lives of staff members does not appear to be factored in at all.

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